



Abstract

The present invention relates to compositions which provide an insulated nanoscopic pathway. The pathway comprises molecules, polymers or nanoscopic particles capable of conducting charge integrated with nanoscopic switches which are capable of electronic communication with the charge-conducting species. Turning "on" the nanoscopic switch electronically "connects" the various molecules/particles, such that a continuous nanoscopic pathway results. The nanoscopic pathway can be used in a sensor, where the switches can act as receptors for analytes. Binding of an analyte can result in a variety of effects on the nanoscopic pathway, including altering the conductivity of the nanoscopic pathway.